

Anthony Keith CAMPBELL

Respectfully submitted,

YOUNG & THOMPSON

By

*Benoît Castel*

Benoît Castel

Attorney for Applicant

Customer No. 000466

Registration No. 35,041

745 South 23rd Street

Arlington, VA 22202

Telephone: 703/521-2297

May 7, 2001

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

The claims have been amended as follows:

4. (Amended) A sequence according to ~~any preceding~~ claim 1, wherein the apopholasin is non-glycosylated.

5. (Amended) A sequence according to ~~any preceding~~ claim 1, wherein the apopholasin is glycosylated.

8. (Amended) A construct according to claim 6 ~~or claim 7~~, wherein the apophotoprotein is apopholasin.

9. (Amended) A recombinant construct according to ~~any one of claims 1 to 8~~, wherein the nucleic acid sequence is linked operably with nucleotides enabling expression and secretion of the apopholasin in a cellular host.

10. (Amended) DNA or RNA according to ~~any of claims 1 to 9~~.

13. (Amended) The apopholasin according to claim 11 ~~or claim 12~~ when expressed by recombinant DNA or RNA according to claim 10.

15. (Amended) A cell, plasmid, virus or live organism having incorporated expressibly therein a sequence according to ~~any one of claims 1 to 10~~, whereby it is capable of producing an apoprotein.

16. (Amended) A vector comprising a sequence according to ~~any one of claims 1 to 10~~.

18. (Amended) A bioluminescent oxidative indicator protein (BOIP), comprising an apophotoprotein according to ~~any one of claims 11 to 14~~ in association with a luciferin.

23. (Amended) A method according to claim ~~21 or 22~~, wherein said BOIP is selected from native or chemically-or genetically-modified BOIP or a 'rainbow protein' based on such a BOIP.

24. (Amended) A method according to ~~any one of claims 21 to 23~~, wherein said BOIP includes a signal peptide, targeting it to a pre-determined extra-or intra-cellular site.

25. (Amended) A method according to ~~any one of claims 21 to 23~~, comprising incubating a test sample with a cell ~~according to claim 15 or with a membrane preparation derived therefrom~~, plasmid, virus or live organism having incorporated expressibly therein:

(a) a sequence that encodes the apophotoprotein of pholasin (alternatively, 'apopholasin');

(b) a sequence substantially homologous to or that hybridises to sequence (a) under stringent conditions; or

(c) a sequence substantially homologous to or that hybridises under stringent conditions to the sequence (a) or (b) but for the degeneracy of the genetic code; or

(d) an oligonucleotide specific for any of the sequences (a), (b) or (c) PROVIDED THAT such homologous sequences according to (b) or (c) encode a protein capable of binding to luciferin.

